THE

OREGON TUALATIN VALLEY

AMATEUR RADIO CLUB

NEWSLETTER

MAY 1988

AN ARRL SPECIAL SERVICE CLUB

NEXT MEETING: MAY 11

SPOTLIGHT ON A HAM

By Lorna, KA7RFD

Congratulations to our newly elected President, Roger Steyaert, K7RXV.

A longtime member of our club, Roger was Vice President last year and has also been a Trustee. Additionally, he is on the Board of the Amateur Radio Relay Group and does his share of the repeater maintenance for that group.

Roger's interest in science and electronics started his interest in Ham ra[illegible] when he was in high school. He op[illegible]tes on all bands from 160 to 450 Mhz but enjoys CW on HF the most. He also had the first Amateur TV station in the state of Oregon and built the TV camera back in 1963.

Roger was born in Sherwood, graduated from Portland State College, as it was then, and now lives with his wife Dianna and three children in Aloha.

Roger Steyaert
K7RXV

Employed as an Electronics Engineer by Tektronix for the past six years, Roger at one time had a very exciting job as a Ground Radio Engineer for Alaska Airlines. He designed ground electronic systems and runway lighting for several airports in Alaska. He holds a commercial pilot's license and flying is still a hobby.

Other hobbies include photography and Black Powder Shooting. He's a member of the Barlow Trail Long Rifle and the B.C. Black Powder Associations. The shoots occur at primitive camps when a reenactment is made of a time period. Roger particularly enjoys one camp where everything is pre 1840 including authentic clothes of the time period and the group travels two and half miles by canoe to get to a site near Oak Ridge.

Roger feels that our hobby is now more complex and consequently more expensive to get started but computers give increased gratification and the resources to study the technology are a lot better.

His hopes for OTVARC this year is that he can increase member involvement and we don't have to depend on one or two people carrying the load.

THE OTVARC TRAVELERS

May campout is the weekend of Saturday 21 and Sunday 22 at Mount St. Helens RV Park. Take the Castle Rock exit off of I-5 Northbound. As usual, there will be a potluck on Saturday evening. Everyone is invited to attend and here's hoping the weather has improved so that the tenters can also enjoy this weekend.

Additionally, a four-day campout is planned for Memorial Weekend. Details will be forthcoming at the May meeting.

Any questions, contact Tony, KA7ZDE or Willis, N7DZR.

PACKET RADIO
By Bren, KM7R, Assistant Section Manager

If you haven't tried it yet now is a good time to start. Packet is very affordable. You need not even have a full blown computer set up, a dumb terminal is enough to start out with. If you have a home computer out there gathering dust except when the kids fire it up for video games, put it to use and come join the fun!

First you will need a TNC or Terminal Node Controller to put in line between your computer and your 2-meter transceiver. That's it.

Packet radio has many advantages. You can connect to an amateur station on Packet and leave them a message without them needing to be home. You can handle traffic on Packet more effortlessly. Downloading computer programs is a cinch and transferring computer programs is a cinch because of the error checking built into the way Packet works. The digitized information or Packets leave your computer going through your TNC and out through your 2-meter transceiver. This information acceses your local Net/Rom node. A node is very similar to a 2-meter voice repeater except the input frequency, user frequency or LAN (Local Area Net) is on a 2-meter frequency and the frequency the nodes talk to each other on ("backbone") is in the 220 Mhz band, 220.95 to be more exact.

The LAN frequency varies for each geographic area. Initially, all the nodes were on 145.01 because there was a need for short hops between the nodes where the path or route was not solid and that was where the old style digipeater came into play. A digipeater strictly relays a Packetg signal in and out on the same frequency simplex. Now that linking between the major nodes in Oregon and in the Northwest is solid, each node is moving off to it's coordinated LAN frequency.

There are a number of nodes accessible by the Willamette Valley and Portland metropolitan area. Eachnode uses an amateur call followed by a designator. For example: W7XI-1 is located on Mt. Livingston near Camas, WA, which has very good coverge on the northern valley and Portland area.

It has been the practice for each node to have an alias or short identifier that may be used instead of the call to link to the node. W7XI-1 alias is PDX. The LAN frequency for PDX is 144.99.

Another accessible node is KM7R-1, with an alias of SLE. It is located on Snow Peak, 30 miles east of Salem in the Cascades. It's LAN is 144.97.

Connecting to a node once you have the TNC and software is very simple. You just give a connect request which various slightly with each type of software and TNC, "C SLE" or "C PDX" at which point you will receive a "CONNECTED TO" message.

You can request a nodes list by sending "N*". You can then see what other nodes the node you are connected to can work. The software for each node is set up to beacon it's existence once or twice every hour. If a node is not heard by other nodes, for whatever reason, in that period of time, then it drops out of the workable nodes list. When it is heard again by other nodes, say if the path quality improves, it will reappear on the nodes list.

Once you see the nodes list and one you wish to connect to you, just issue another connect request "CPDX" or if on PDX, "C SLE". Then once you receive the "CONNECTED TO" message you can request to connect to a home station in the same way, "C KA7RFD".

Lots of fun and very simple too! All on VHF across town, across the state or across the country and we haven't even explored HF Packet yet.

Traffic on Packet has been aided by the store and forward mailbox. We have several in the area. They are all running the same basic software with excellent instructions on how to list your traffic once you connect. The actual forwarding system for messages has been much defined and now sorts your traffic by postal zip code and phone prefix of the destination.

Heard enough? I hope this has peaked the interest of some of you to get on Packet. You can use the nodes, mailboxes or just move off to a non LAN frequency and ragchew to a friend across town. In fact, this article has been sent to Lorna, KA7RFD, via Packet radio simplex on 144.91 across town for insertion in the Newsletter.

There are many ways in which you can use Packet and all of them enjoyable. Many of us Packeteers who are on today would be more than happy to lend you a hand in whatever way we can to help you get on Packet and enjoy it as much as we do. If I may be of help to anyone out there interested in Packet or who has any questions about how to get started, don't hesitate to call me at 293-1410 evenings.

So Happy Packeting and 73 for now.

(Editor's note to any ARC editors: Please feel free to use this fine article from Bren in your Newsletter.)

TED McELROY WAS A PIKER

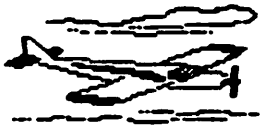
By Lee, AL7W
Published by permission of The sPARC Gap Journal of the Portland ARC

One of the features of this year's ARRL National Convention is an effort to establish a new speed record in the International Morse Code. There has not been an official challenge to the 75+ w.p.m. record set by Ted McElroy in at least the past 50 years. In the interim, there have been some changes in the way that code speed is measured, changes that actually lower the speed he attained.

The base word for speed measurement in the late '30s was "TEST". This is considerably shorter than "PARIS", which is now the basis for speed measurements. By our means of speed measurement, McElroy's actual speed would be somewhere in the mid to high 60s, rather than the 75 that he was credited with. Therefore, the challenge is even more rigorous: The new champion will have to exceed McElroy's actual speed by at least 20 percent before the record can be recognized as being substantially higher than 75 w.p.m.

The eliminations will begin on Friday afternoon, September 9 with an official speed run at 50 w.p.m. Particpants, who must pre-regisger, are encouraged to bring their pet typewriter (computers and electronic typewriters with editable memory storage are not allowed). Transmissions will be approximately five minutes long of plain text. All participants will be certified as to the actual speed attained during the course of this championship run.

We will be needing the services of several volunteers during the course of the contest for reading contestants' copy for exact accuracy. We'll be dealing with typewritten copy, so we won't have the problem of reading people's handwriting. Judges in the contest will be given hard copy printouts of all text files sent. If you wish to be a contestant or might be able to help with the judging, please contact AL7W (7:30-9:30PM) at 777-1032. We hope to be able to crown a new code speed champion at this year's ARRL National Convention.



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JANET BELL WB7FJC 648 4147

WANTED - EMERGENCY COORDINATOR FOR WASHINGTON COUNTY

By Dale, W7FBP

Would you like to work to establish a viable working relationship with all federal, state, county, city governmental and private agencies in the ARES jurisdictional area which might need the services of ARES in emergencies?

As Emergency Coordinator for Washington County that would be part of your duties.

The ARRL Emergency Coordinator is a key team player in ARES on the local emergency communications scene, working with the Section Emergency Coordinator (Dale, W7FBP), the DEC (Bob, KV7F) and Official Emergency Stations. The EC prepares for, and engages in, management of communications needs in disaster.

The only qualifications are membership in ARRL and a Technician or above class license.

If you are interested in volunteering for this position, or know of anyone who would be interested, please contact Dale LeBarron, W7FBP, at 638-7768 or Bob Dorman, KV7F, at 246-4550.

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WORDS FROM THE PRESIDENT
By Roger, K7RXV

I would like to thank Paul, WB6SHR, for the fine job he has done for the last year and a quarter as President of OTVARC. I am sure that you join me in wishing him well in his new endeavors in California.

I have appreciated the help and support of the club membership in the past in the various board and committee positions that I have held and I am counting on the continued input from all the club members. We must all remember that this isn't the "Club", it is our club and will only be as good as we each make it. Therefore, I am asking each member to bring their concerns about OTVARC to me or any other Board member, also please allow the Board time to react to your input. Remember that the Board are all volunteers and also have many other commitments on their time.

The Board meetings are the first Wednesday of each month and I would like to invite any interestedd member to feel free to come and participate at any Board meeting, If there is anything that I should be made aware of please call me on the phone and let me know. My home phone number is 642-1419 and my work number is 629-1419.

This month's meeting is in celebration of the 10th anniversary of OTVARC and I would like to encourage all members to participate in the celebration at this month's meeting.

Remember this is your Club and let's all work with your Board to make the club even better in the next 10 years.

FOR SALE

1. Kenwood TR 2500 2M FM Transceiver with Mike - $150.
2. Kenwood base stand ST-2 charger - $50.
3. Kenwood TS-820S SSB Transceiver with Kenwood MC-50 Mike - $500.
4. Kenwood SW200 SWR Bridge - $25.
5. Nye Viking electronic keyer - $45.
6. Dentron Super Tuner - $50.
7. Beam antenna - $75.
8. Vertical antenna - $50.
9. Dummy load - $15.
10. Micranta regulated 12-volt power supply - best offer.
11. B & W Protax coaxial selector switch model 376 - best offer.
12. CDE Auto Rotor - best offer.

Each item can be sold individually or the lot for $950.

Call Carol, N7ISW 645-1733

PLOTTING ANTENNA PATTERNS (Part I)
By Floyd, W7KLE

FCC exams continue to have questions about relative radiation patterns of two vertical antennas with specific spacing and current phase relationships. The subject is discussed to some extent in ARRL publications, but only a couple of examples are given and no method of actually calculating patterns is shown.

With a scientific calculator (or a pencil and cosine table, if you have the time) such patterns can be easily made. Relative radiation for every 10-15 deg. in azimuth through 180 deg. is usually sufficient. Use an 8" x 10" polar graph sheet. If you don't have one, they are easily made.

Make 19 radials and circles suitable for a maximum reading of "2" with sufficient graduations for plotting accuracy two places to the right of the decimal. If the pattern has minor lobes, a few more points about the minimum values may be necessary. With the same amplitude of current in both antennas (the usual Ham case) the pattern will be symmetrical and the half not calculated will be a mirror image of the one plotted. Current sign (+ or -) is not important, the difference being a complete reversal of the direction the pattern faces. Using positive avoids one more operation.

Now: Push buttons as shown and ignore intermediate answers (sub-totals). The final figure is horizontal, relative radiation, either on the axis (0 deg. or 180 deg.) or in the direction chosen from the array axis.

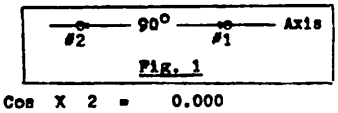

Fig. 1

RADIATION DIRECTION		SPACING		PHASE								
0	Cos	X 90	=	+ 90	=	÷ 2	=	Cos	X 2	=	0.000
90	Cos	X 90	=	+ 90	=	÷ 2	=	Cos	X 2	=	1.414
180	Cos	X 90	=	+ 90	=	÷ 2	=	Cos	X 2	=	2.000

Note the repetition in this process. The only new thing plugged in for each computation is the radiation direction. With a little bit of practice on this, one can bat out a complete radiation pattern of this kind in five or six minutes. More complicated ones take a bit longer but the process is identical. Figure 1 shows the basic problem.

I talked to a Ham recently who had just taken the exam to up-grade. I asked him how he did, although it was almost apparent by the way he looked. He said, "I blew it by only one question". Well, if the above helps in any way with one of those questions, the time writing this has been well spent.

It should be noted that mutual coupling and ground effect is not included in these calculations and that these do not, in most cases, radically change the formation of the patterns. Broadcast use is a different matter.

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SPECIAL 10TH ANNIVERSARY MEETING
WEDNESDAY, MAY 11

H celebrate OTVARC's 10th Anniversary at a special social meeting on May 11 at Beaverton Elk's Lodge. We'll have a 30-minute regular business meeting and the rest of the evening will be FUN.

Past Presidents will be recognized and then we'll have a slide program in reminisance of the past ten years with Stan, W7NI, as emcee. And plenty of time to visit with your friends.

For the usual price of $5.50 we'll have a special hot and cold buffet. This will be set up all evening so you can do the in thing and "graze".

There will also be a special door prize, dinner for two at the Cattle Company.

If you usually can't make it to the meeting, try really hard to attend this one. Any questions - please call the ladies of the social committee and get your RSVPs into them.

PUBLIC SERVICE By Randy, KZ7T

You can tell that Spring is here when the KAO Keg Roll comes around. This year it started in Eugene instead of C allis so we had to get people to w . from Thursday through Sunday.

I am going to list all the Hams who worked in the Portland area instead of just the OTVARC members. A big thanks to Lorna, KA7RFD; Pat, KA7UFG; Bud, KC7PS; Van, KE7BB; Roger, KA7RNN; Jeff, KA7AKU; Paul, WB7BBG; Roy, N7DUJ; Jim, KB7ADH; Randall, WA7AWJ; Emerson, K7SGU and Lyman, W7AZD for helping me with the fixed stations and the mobiles. The last figure I heard on the money collected was in excess of $4,000 which is much better than last year.

Public Service for the month of May - we have the Doernbecher's run, the Viking Classic, the Black Powder Shoot and a run in Beaverton.

The month of June is rather quiet except for Field Day and the Trask Motor Cycle Trials. I know Dave, WB7REC, 657-4058, is still looking for people to help at the two day Trask event, so if you can see your way clear for even one day, Dave would appreciate it. Remember it's scheduled the same weekend as Field Day.

THANK YOU
B alph Karls, WB7VGS

My wife Mildred is doing just fine after her surgery in April. She wants to thank the club for the lovely plant sent to her by the club. She will be seeing you all at the May party.

SPECIAL RAFFLE AT MAY MEETING

In place of our regular OTVARC raffle at the May meeting, we will have a special drawing with the entire proceeds going toward the purchase of an airline ticket for Paul, WB6SHR to attend the National Convention.

All items will be donated. If you have anything you would like to donate, not limited to ham gear, please bring it to the May meeting or contact Geno, KA7KBH.

* * * * * * * * * * * * * *

OTVARC COFFEE MUGS

We still have Coffee Mugs available - they make a nice gift for an out of town ham.

Cost $3.50 each or $20.00 for six.

See Paul, WB7BBG our Promotions Manager at the meeting or call 244-7420 to place a large order.

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A REMINDER

Field Day is scheduled for June 25 and 26 - set up is Friday, June 24. Mark the date on your calendar - you may be asked to be chef of the day, play with Jack, KA7HOJ, in his speed boat or even operate.

More details at May and June meetings.

THE OTVARC NEWSLETTER is published monthly by the Oregon Tualatin Valley Amateur Radio Club, Inc. The opinions, views and recommendations of its contributors are not necessarily those of the Club, its officers, advertisers or Newsletter Committee.

Articles may be submitted to:
Lorna Campbell, KA7RFD, Editor
9890 SW Inglewood
Portland, OR 97225.
Cutoff date for all newsletter material is the 20th of the preceeding month.

Dues for OTVARC membership are $10.00 per year and are prorated quarterly. There is a one-time initiation fee of $2.00.

Meetings are held on the Second Wednesday of each month at the Beaverton Elks Lodge, 3500 SW 104 Avenue, starting at 7PM. A buffet dinner is served at 6:15PM.

All correspondence other than for the Newsletter should be sent to:
Ore. Tualatin Valley Amateur Radio Club
PO Box 25545
Portland, OR 97225-0545.

DX FOR BEGINNERS AND OTHERS
By Greg, W7AGQ

The weather is improving, so it is time to think about antennas (actually the thinking should be done in the Winter and the doing in Spring and Summer). In this column I will only speak of single band, full sized beams. Multi-band and shortened beams will come later.

Last column, we talked about a "simple" 3-element, Yagi beam. I lied...it ain't simple at all.

For starters, it would be helpful to know the desired frequency of operation including whether we want the antenna for phone or CW or both. Then we should know whether we want mainly gain or backside rejection and what kind of horizontal pattern we need. Many of these things change with adjustments to the element lengths, spacing along the boom or height above ground. Use the wrong dimensions and your antenna could be a real dud.

The normal material for a beam is aluminum because of its light weight and relative strength together with good electrical properties (a fairly good conductor). Beams can be made of other material, even wire.

As you might expect, some beams have more or less than three elements. A two element beam can use a driven element and either a director or a reflector. Most multi-element beams use one reflector (R), often one driven element (DE) and one or more directors. These directors are called D1, D2, D3, etc. If you have the spacings and lengths correct, the greater the number of elements, the higher your gain. It well may also improve your front to back and front to side ratio.

Many beams from the KLM Company use TWO driven elements to improve bandwidth and possibly get a little more gain. Apparently if you work it right, you can have one DE tuned for the CW band and one for the phone band and cover both with relative gain.

Front to back and front to side ratio means about what you think. It is normally thought of in receive terms and expressed in dB. If your antenna has a 30 dB front to side ratio that means signals coming from the side are a lot weaker than if they had come from the front (power difference of 1000). If you have a 20 dB front to back ratio, then signals off the back are down that much (100 times in power level terms).

Good antennas can be very large. Recently QST carried a picture of a full sized, 3 element beam at OH1RY in Finland. The Reflector is 143.7 feet long, the Driven Element 135.5 feet and the Director a mere 126.6 feet long. It all rests on a 72 foot boom made from 20 inch steel lattice tower sections. The inner sections of each element are made from 6-inch aluminum street lighting poles!

On the other hand an antenna for 10 meters can be very manageable. A good three element beam usable in the Novice phone band may only be 9.5 feet long with 17.1 feet (R), 16.8 feet (DE) and 16 feet (D) elements. This Yagi should give about the same performance as the OH1RY 80 meter monster.

The difference, of course, is that there are probably less than a dozen hams in the world with full sized 80 meter beams but tens of thousands with at least a 3 element 10 meter Yagi.

I consider W2PV's work, "Yagi-Antenna Design" to be the best antenna book available. Dr. Lawson is a silent key now but the ARRL has recently published his manuscript. It is available in hard cover for $15. It's well worth it.

For the DXer, time, effort and money spent on antennas is most important. Antennas work on both transmit and receive. In most cases a good transmit antenna will also do well on receive and with many of the same properties.

Improvement of a transmitter/amplifier or a receiver may be worthwhile but they only work one way and with some upside limits (for instance, 1500 watts is the legal maximum).

The antenna system is not subject to such arbitrary restrictions. You could be the first on your block to build a full sized 160 meter rotatable Yagi (this should be almost twice as big as the OH1RY beam).

Antenna design never seems to end. Even now a couple of hams are working on a system of 3, 3 element 80 meter beams placed on three, in-line towers (theoretical gain is 12dB over a dipole).

I have talked to EA3OT in Barcelona who uses 3, 5-element Yagis, stacked successively about 60 feet from the lower one. He puts in a tremendous signal to the West Coast. One ham in California has a 20 meter beam on a 110 foot boom. The experiments go on.

One thing you should remember. The big guns with the monster antennas aren't always on and even if they are they'll get tired of talking and you will get your DX station if you LISTEN AND HAVE PATIENCE. 1500 watts to a large and high antenna isn't necessary (but it won't hurt either). Want good DX? Put up the biggest, highest antenna you can afford (and get away with). Then play with what you've got.

More later.

73 and 88 (where appropriate).

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